

It's time to open our eyes to the Internet of things

Stating that the Internet has already fundamentally transformed society may be correct, but at the same time, the major transformation is actually still ahead of us. Several new technologies are converging so that the Internet is on the verge of a very substantial expansion, as large and small things will be connected and get an identity on the net.

After the Internet of computers, when our servers and personal computers were connected to the global network, and the Internet of mobile phones, when it was time for phones and other mobile devices, the next phase in the development is the Internet of things, when more or less anything will be adopted into and become manageable in the virtual world. This revolution will be the net's greatest expansion ever and have radical effects on all industries – as well as our entire everyday life.

Converging technologies

To connect all manner of things to the Internet is possible today through a mix of technologies originating in different industries. The Internet of things is based in part on the traditional Internet industry that, with its open servers and WLAN technology, offers a cost-effective, open architecture. Furthermore, identification is taken from the transportation industry with its RFID technology, which offers a simple way to provide physical things with a digital identity.

The sensor technology has been developed so that things can sense various real conditions, digitise them and report them over the net. In many applications geographic position is especially important. Finally, the general minimisation of technical components makes it possible to develop extremely cost-effective solutions for connecting things to a network. Taken together, this means that the technical prerequisites for the Internet of things are there and will be developed further in the years to come.

Applications here today

But the Internet of things is more than just visions. The development is already under way and applications exist in operation today in a number of different industries. The transportation industry is advanced and for example keeps track of railway cars and containers by connecting them to the Internet. Other examples include connecting boat engines in order to keep a look-out on their whereabouts or real estate managers connecting sensors to the Internet to control things like indoor climate, light or smoke. More and more people also connect their home entertainment systems.

Even if it is motivated to say that something big is about to happen, we are, however, only at the start of this development. Within virtually every industry, you can see a potential for applications that increase efficiency or simplify our lives. Just take something like medicine in the home, where the physician gets information about patients via connected medical equipment, or cars telling the owner when they need to be serviced, based on facts, rather than the number of kilometres driven.

A forward-looking debate is welcome

The Internet of things is a new phase in the development of the Internet that will have enormous consequences. Fundamentally, this is a very positive development, offering great possibilities. The new technology can both result in a higher quality of life for the individual

and create growth in the economy, as different industries take it to heart and develop various interesting applications.

At the same time, there are challenges that we must not ignore. Not least, issues of personal integrity are at stake, as well as the general security in a society ever more dependent on technology that can be knocked out or manipulated. There are also environmental aspects when every individual can become surrounded by hundreds – maybe even thousands – of connected gadgets that all demand energy.

The time has come to open our eyes to both the possibilities and the pitfalls, since this is already happening. If a forward-looking debate can be established, it would ameliorate the conditions for positive development. The Internet of things will have consequences on both technology and society. To begin with, it necessitates an Internet infrastructure able to handle the expansion, where IPv6 implementation is one of several key issues. Furthermore, security solutions of every shape and form must be developed. And, not least important, the impact on society at large and at the individual level must be closely watched.

In order for us to take full advantage of the possibilities offered by the Internet of things and to avoid the pitfalls, we encourage a wide joint effort. .SE starts its own share of this work with the report “Connected gadgets” which is released during the Internet Days conference in Stockholm and by arranging a workshop entitled “Opportunities Presented by the Internet of Things” held all day on 5 November.